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NEW MINING METHOD AT KUZBASS COAL MINES

The Tyrganskiye Uklony Mine of the Kuzbassugol' Combine is working steeply dipping coal seams, while the Polysayevskaya-Severnaya Mine of the Kemerovugol Combine is working slightly dipping seams.(1) Both mines are trying out a new hydraulic method of coal mining which completely revolutionizes the entire process of breaking down the coal seam and transporting the coal to the surface. A hydromonitor with a powerful jet of water undercuts the coal seam along the entire face to a depth of 12-2 meters, at first along the lower part of the face, and then in layers with 10 centimeters between cuts. The coal is washed off from the face and, together with the water, moves along a trough to the coal crusher; from there it is pumped to the surface by a coal pump. (2) The 6-NUV pump is in use at the Tyrganskiye Uklony Mine. (3)

The hydraulic method of coal mining unifies technologically and mechanizes completely all basic face operations: cutting, breaking up, loading, and conveying of coal.(2)

Preliminary construction was done in both mines in preparation for conducting the experiment in hydraulic mining. The construction work in the Tyrganskiye Uklony Mine was completed in August 1952, and at that time the mine started its experiment with the purpose of testing the whole mechanical setup, checking on planned scope of operations, and training personnel. Delivery of coal from the mine was to temporary sedimentation tanks.(1)

The present practice in the hydraulic section of the Tyrganskiye Uklony Mine is as follows: a total of nine persons are employed during a shift -two jet operators for work at the coal face and two for development work, one operator each at the coal crusher, the coal pump, and the pumping station, and two fitters and repair men at the fuel transport line.(2)

The productivity of the hydromonitor is 50-60 tons per hour, but it goes as high as 90-100 tons per hour and, in case it is necessary to remove the coal layers with extra speed from the face, the performance of the hydromonitor may be pushed to 2-2.5 tons per minute. The maximum shift speed of a face brigade of two persons is 300 tons.(3)

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In 1952, the Tyrganskiye Uklony Mine achieved very high indexes for the labor productivity of the underground worker, as is shown in the following table:

Shift Labor Productivity (percent) For Hydraulic Mining From 26 Sep Through For Usual Types of Mining <u>5 Oct (10 days)</u> On Record Days For entire section 100 300 500 For underground workers 100 320 600

These indexes were achieved even though the surface setup was inadequately organized and had an unfavorable effect on the underground processes.(3)

In hydraulic mining, capital mine workings are reduced to a minimum. Coal extracted by this method goes through a phase of wet cleaning during transport. At the mine surface it goes directly to a cleaning apparatus. A centrifuge set up at the Polysayevskaya Mine dewaters the coal and purifies the water at the same time. The dewatered and dried coal is loaded onto rail-road cars.(2)

Safety conditions of the underground miner are improved by hydraulic mining. Among factors contributing to this end are the absence of coal dust at the working front and the fact that blasting is not used to break down the coal face.(3)

The coal output from the Tyrganskiye Uklony Mine by the hydraulic method has already amounted to several thousand tons. The Collegium of the Ministry of the Coal Industry has made a decision to work out special measures to assure the further use and extension of underground coal mining by hydraulic methods.(1)

SOURCES

- 1. Moscow, Master Uglya, No 2, 1953
- 2. Ibid., No 1, 1953

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3. Moscow, Mekhanizatsiya Trudoyemkikh i Tyazhelykh Rabot, No 2, 1953

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